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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/706,982	11/14/2003	Harold W. Spielman	71060-0020	7495

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EXAMINER	
WILLIAMS, THOMAS J	

ART UNIT	PAPER NUMBER
3683	

DATE MAILED: 07/15/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/706,982	SPIELMAN, HAROLD W.	
	Examiner	Art Unit	
	Thomas J. Williams	3683	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *10 June 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-14 and 16-21* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,9-11,14 and 16-21* is/are rejected.

7)☒ Claim(s) *2-8,12 and 13* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on June 10, 2005 has been entered.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 1, 9, 16, 17 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Graber in view of Larson et al.

Re-claims 1 and 17, Graber teaches a trailer having an un-powered axle, the axle includes brake assemblies and wheels, a cooling system is associated with each brake assembly, the cooling system includes a cooler assembly 80; a pump 58; a pump drive linked to a transmission of the un-powered axle, the output of the transmission driving the pump, the transmission is the link between the pump and the axle. However, Graber fails to teach the cooler assembly as being an air-oil cooler assembly, a hydraulic fan assembly adapted to circulate cooling air past the air-oil cooler assembly, wherein a fan is driven by a portion of the oil, and a reservoir for storing the oil.

Larson et al. teach a tractor/trailer having oil cooled brakes on the trailer. The cooling assembly is provided with an air-oil cooler, wherein air is moved past the cooler using an hydraulic fan operated by a portion of the oil, in addition the system is provided with a reservoir for storing the oil. It would have been obvious to one of ordinary skill in the art to have provided the trailer brake cooling system of Graber with the air-oil cooling assembly taught by Larson et al., this would have provided the cooling assembly with an integral cooling fan for providing a dedicated source of cooling fluid, thus eliminating the need for connection to a separate system for providing a cooling fluid.

The assembly of Graber requires additional fluid coolant lines (see figure 11) connected to a secondary system (such as a radiator on a tractor). By substituting the assembly of Graber with the assembly taught by Larson et al. one would have eliminated the need for connecting the cooling assembly to a secondary cooling system.

Re-claim 9, Graber teaches an output of the pumps is split to a pair of cooling inlets on the un-powered axle (just past the HEX, this is consistent with the instant invention).

Re-claim 16, the trailer is capable of being any type of trailer known in the art.

Re-claim 18, the un-powered axle is mounted at a rear, see figure 11.

4. Claims 10, 11 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Graber in view of Larson et al. and in view of US 4,736,821 to Ries.

Re-claim 10, Graber teaches a method of cooling brakes in an axle assembly, comprising: providing a trailer having an un-powered axle with at least one pump, the pump is driven by the rotation of the shaft of the axle assembly; direction oil exiting the pump to an oil cooler 80, directing at least a portion of the oil exiting the oil cooler to the brakes. However, Graber fails to

teach the cooler assembly as being an air-oil cooler assembly, with a hydraulic fan assembly adapted to circulate cooling air past the air-oil cooler assembly, wherein a fan is driven by a portion of the oil, and a reservoir for storing the oil.

Larson et al. teach a tractor/trailer having oil cooled brakes on the trailer. The cooling assembly is provided with an air-oil cooler, wherein air is moved past the cooler using an hydraulic fan operated by a portion of the oil, in addition the system is provided with a reservoir for storing the oil. It would have been obvious to one of ordinary skill in the art to have provided the trailer brake cooling system of Graber with the air-oil cooling assembly taught by Larson et al., this would have provided the cooling assembly with an integral cooling fan for providing a dedicated source of cooling fluid, thus eliminating the need for connection to a separate system for providing a cooling fluid.

However, Graber as modified by Larson et al. fail to teach the pump mounted externally of the cooling brake assembly. Ries teaches a pump for moving cooling oil through a brake assembly, the pump is mounted externally of the cooling brake assembly. It would have been obvious to one of ordinary skill in the art to have mounted the pump assembly of Graber externally of the cooling brake assembly as taught by Ries, this would have provided easier access for the operator during periods of maintenance.

Re-claim 11, the pump is driven by a transmission linked to the axle.

Re-claim 14, the pump is directly linked to the transmission.

5. Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over Graber in view of Ries.

Re-claim19, Graber teaches in a trailer (see figure 11 and column 1 lines 29-32) having an un-powered axle assembly, the axle has brakes that require cooling, a hydraulic pump 58 supplies cooling oil to the brakes (via inlet 39), the pump is driven using rotation of the un-powered axle, a heat exchanger assembly 80 is adapted to receive the heated oil from the brakes for cooling and recirculation back to the brakes.

However, Graber fails to teach the pump mounted externally of the cooling brake assembly. Ries teaches a pump for moving cooling oil through a brake assembly, the pump is mounted externally of the cooling brake assembly. It would have been obvious to one of ordinary skill in the art to have mounted the pump assembly of Graber externally of the cooling brake assembly as taught by Ries, this would have provided easier access for the operator during periods of maintenance.

6. Claims 20 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Graber in view of Larson et al. as applied to claims 1 and 17 above, and further in view of Ries.

Re-claims 20 and 21, Graber as modified by Larson et al. fail to teach the pump mounted externally of the cooling brake assembly. Ries teaches a pump for moving cooling oil through a brake assembly, the pump is mounted externally of the cooling brake assembly. It would have been obvious to one of ordinary skill in the art to have mounted the pump assembly of Graber externally of the cooling brake assembly as taught by Ries, this would have provided easier access for the operator during periods of maintenance.

Allowable Subject Matter

7. Claims 2-8, 12 and 13 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Response to Arguments

8. Applicant's arguments filed May 10, 2005 have been fully considered but they are not persuasive. The examiner respectively disagrees with the applicant regarding the ability to mount the pump in Graber external to the brake cooling assembly. The pump would remain in fluid communication with the assembly (via the conduits), as illustrated in Ries and thus be able to function in the same manner. Furthermore, it is the opinion of the examiner that by removing the pump from within the brake assembly one would be able to more easily conduct maintenance and repair on the pump without the need for removing the brake assembly.

Regarding claims 1 and 17, it is believed that the examiner has provided a motivation for the combination. Specifically the system of Graber as modified by Larson et al. no longer requires attachment to a separate system for providing a cooling medium (as indicated by the pipes in figure 11). The modified system merely uses air forced through the onboard heat exchanger, which is well known in the vehicle arts. It would seem to the examiner that using ambient air, which is readily available, would be cheaper and more reliable than having to utilize an external source of cooling medium. It is noted that Larson et al. is merely relied upon to teach the use of a hydraulic fan for forcing air through a heat exchanger. The arguments regarding the brake cooling system setup in Larson et al. are not relevant to the rejection. It is noted that a

teaching reference is just that, it is a reference that merely teaches a limitation that may be lacking in the base reference.

Conclusion

9. Any inquiries concerning this communication or earlier communications from the examiner should be directed to Thomas Williams whose telephone number is 571-272-7128. The examiner can normally be reached on Monday-Thursday from 6:30 AM to 4:00 PM. The examiner can also be reached on alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Charles Marmor, can be reached at 571-272-7095. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 571-272-6584.

TJW

July 12, 2005

THOMAS WILLIAMS
PATENT EXAMINER

Thomas Williams
AU 3683
7-12-05